Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (original) A multidimensional database control system, comprising:

a data storage unit for storing layer rule definition data, layer structure definition data, database data, input data, layer structure information and layer rule;

a layer rule management unit connected to said data storage unit for managing the layer rule based upon the layer rule definition data;

a layer structure information management unit connected to said data storage unit and said layer rule management unit for managing the layer structure information based upon the layer structure definition data;

a multidimensional database management unit connected to said data storage unit for inputting the input data in the database data; and

a layer structure information update unit connected to said layer structure information management unit and said multidimensional database management unit for receiving a command to generate layer information for the input data and for registering the layer information at the layer structure information, wherein said multidimensional database management unit enters the input data based upon the layer information.

Claim 2. (original) The multidimensional database control system according to claim 1 wherein the layer rule includes rules for character-row converting a name of the member and for generating the layer information.

Claim 3. (currently amended) The multidimensional database control system according to claim 2 wherein the rules are expressed in ~~formal expressions~~regular expression.

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Claim 4. (currently amended) The multidimensional database control system according to claim 1 wherein the layer rule includes ~~a name~~an identifier of a file and descriptions of a predetermined format, the file containing ~~predetermined rules~~a source for generating the corresponding layer information.

Claim 5. (currently amended) The multidimensional database control system according to claim 4 wherein said layer structure information update unit accesses the file to obtain ~~the predetermined rules~~hierarchical information.

Claim 6. (currently amended) The multidimensional database control system according to claim 1 wherein the layer rule includes ~~a name~~an identifier of a database and descriptions of a predetermined format, the database containing ~~predetermined rules~~a source for generating the corresponding layer information.

Claim 7. (currently amended) The multidimensional database control system according to claim 6 wherein layer structure information update unit accesses the database to obtain the ~~predetermined rules~~source.

Claim 8. (original) The multidimensional database control system according to claim 1 wherein said layer structure information management unit determines whether or not the layer structure information exists, in the absence of the layer structure information, said layer structure information management unit generating the layer structure information that represents the input data in the multidimensional database.

Claim 9. (original) The multidimensional database control system according to claim 1 wherein the layer rule further comprises a main layer rule and a plurality of sub-layer rules, said layer structure information management unit generating the layer information according to a sequential application of the main layer rule and the plurality of the sub-

layer rules, said layer structure information management unit determining whether or not the layer information is successfully generated.

Claim 10. (original) The multidimensional database control system according to claim 1 further comprising an input unit connected to said layer structure information management unit for inputting the input data, said layer structure information management unit returning the layer information to said input unit subsequent to registering the layer information.

Claim 11. (original) A multidimensional database control method, comprising the steps of:

storing layer rule definition data, layer structure definition data, database data, input data, layer structure information and layer rule for a multidimensional database;

maintaining the layer rule based upon the layer rule definition data;

maintaining the layer structure information based upon the layer structure definition data;

inputting the input data in the database data;

generating layer information for the input data based upon the layer rule, the input data and the layer structure information;

registering the layer information at the layer structure information; and

entering the input data in the multidimensional database based upon the layer structure information.

Claim 12. (original) The multidimensional database control method according to claim 11 wherein the layer rule includes rules for character-row converting a name of the member and for generating the layer information.

Claim 13. (currently amended) The multidimensional database control method according to claim 12 wherein the rules are expressed in ~~formal expressions~~regular expression.

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Claim 14. (currently amended) The multidimensional database control method according to claim 11 wherein the layer rule includes ~~a name~~an identifier of a file and descriptions of a predetermined format, the file containing ~~predetermined rules~~a source for generating the corresponding layer information.

Claim 15. (currently amended) The multidimensional database control method according to claim 14 further comprising a step of accessing the file to obtain ~~the predetermined rules~~hierarchical information.

Claim 16. (currently amended) The multidimensional database control method according to claim 11 wherein the layer rule includes ~~a name~~an identifier of a database and descriptions of a predetermined format, the database containing ~~predetermined rules~~a source for generating the corresponding layer information.

Claim 17. (currently amended) The multidimensional database control method according to claim 16 further comprising a step of accessing the database to obtain the ~~predetermined rules~~source.

Claim 18. (original) The multidimensional database control method according to claim 11 further comprising a step of determining whether or not the layer structure information exists, in the absence of the layer structure information, generating the layer structure information that represents the input data in the multidimensional database.

Claim 19. (original) The multidimensional database control method according to claim 11 wherein the layer rule further comprises a main layer rule and a plurality of sub-layer rules and further comprising additional steps of:

  generating the layer information according to a sequential application of the main layer rule and the plurality of the sub-layer rules; and

  determining whether or not the layer information is successfully generated.

Claim 20. (original) The multidimensional database control method according to claim 11 further comprising additional steps of:

inputting the input data; and

returning the layer information subsequent to registering the layer information.

Claim 21. (original) A computer program for managing a multidimensional database, performing the steps of:

storing layer rule definition data, layer structure definition data, database data, input data, layer structure information and layer rule for a multidimensional database;

maintaining the layer rule based upon the layer rule definition data;

maintaining the layer structure information based upon the layer structure definition data;

inputting the input data in the database data;

generating layer information for the input data based upon the layer rule, the input data and the layer structure information;

registering the layer information at the layer structure information; and

entering the input data in the multidimensional database based upon the layer structure information.

Claim 22. (original) The computer program for managing a multidimensional database according to claim 21 wherein the layer rule includes rules for character-row converting a name of the member and for generating the layer information.

Claim 23. (currently amended) The computer program for managing a multidimensional database according to claim 22 wherein the rules are expressed in ~~formal expressions~~regular expression.

Claim 24. (currently amended) The computer program for managing a multidimensional database according to claim 21 wherein the layer rule includes ~~a name~~an identifier of a

file and descriptions of a predetermined format, the file containing ~~predetermined rules~~a source for generating the corresponding layer information.

Claim 25. (currently amended) The computer program for managing a multidimensional database according to claim 24 further comprising a step of accessing the file to obtain ~~the predetermined rules~~hierarchical information.

Claim 26. (currently amended) The computer program for managing a multidimensional database according to claim 21 wherein the layer rule includes ~~a name~~an identifier of a database and descriptions of a predetermined format, the database containing ~~predetermined rules~~source for generating the corresponding layer information.

Claim 27. (currently amended) The computer program for managing a multidimensional database according to claim 26 further comprising a step of accessing the database to obtain the ~~predetermined rules~~source.

Claim 28. (original) The computer program for managing a multidimensional database according to claim 21 further comprising a step of determining whether or not the layer structure information exists, in the absence of the layer structure information, generating the layer structure information that represents the input data in the multidimensional database.

Claim 29. (original) The computer program for managing a multidimensional database according to claim 21 wherein the layer rule further comprises a main layer rule and a plurality of sub-layer rules and further comprising additional steps of:

        generating the layer information according to a sequential application of the main layer rule and the plurality of the sub-layer rules; and

        determining whether or not the layer information is successfully generated.

Claim 30. (original) The computer program for managing a multidimensional database according to claim 21 further comprising additional steps of:

inputting the input data; and

returning the layer information subsequent to registering the layer information.

Claim 31. (new) A multidimensional database control system, comprising:

a data storage unit for storing layer rule definition data, layer structure definition data, database data, input data, layer structure information and layer rule, the layer rule including rules for character-row converting a name of the member and for generating the layer information;

a layer rule management unit connected to said data storage unit for managing the layer rule based upon the layer rule definition data;

a layer structure information management unit connected to said data storage unit and said layer rule management unit for managing the layer structure information based upon the layer structure definition data;

a multidimensional database management unit connected to said data storage unit for inputting the input data in the database data; and

a layer structure information update unit connected to said layer structure information management unit and said multidimensional database management unit for receiving a command to generate layer information for the input data and for registering the layer information at the layer structure information, wherein said multidimensional database management unit enters the input data based upon the layer information.

Claim 32. (new) A multidimensional database control method, comprising the steps of:

storing layer rule definition data, layer structure definition data, database data, input data, layer structure information and layer rule for a multidimensional database;

maintaining the layer rule based upon the layer rule definition data, the layer rule including rules for character-row converting a name of the member and for generating the layer information;

maintaining the layer structure information based upon the layer structure definition data;

inputting the input data in the database data;

generating layer information for the input data based upon the layer rule, the input data and the layer structure information;

registering the layer information at the layer structure information; and

entering the input data in the multidimensional database based upon the layer structure information.

Claim 33. (new) A computer program for managing a multidimensional database, performing the steps of:

storing layer rule definition data, layer structure definition data, database data, input data, layer structure information and layer rule for a multidimensional database;

maintaining the layer rule based upon the layer rule definition data, the layer rule including rules for character-row converting a name of the member and for generating the layer information;

maintaining the layer structure information based upon the layer structure definition data;

inputting the input data in the database data;

generating layer information for the input data based upon the layer rule, the input data and the layer structure information;

registering the layer information at the layer structure information; and

entering the input data in the multidimensional database based upon the layer structure information.